MATHEMATICS CROSSWALK
2008 DRAFT MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 2

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL				
Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	1	Express numbers to 1,000, in groups of hundreds, tens, and ones using and connecting multiple representations, including: • base 10 models, • pictures, • spoken and written words, • numbers, and • expanded notation.	1	Make a model to represent a given whole number 0 through 999.
			2	Identify a whole number represented by a model with a word name and symbol 0 through 999.
			4	Identify whole numbers through 999 in or out of order.
			5	Write whole numbers through 999 in or out of order.
			8	Construct models to represent place value concepts for the one's, ten's, and hundred's places.
			9	Apply expanded notation to model place value through 999 (e.g., 378 = 3 hundreds + 7 tens + 8 ones).
	2	Apply counting to 1,000 using different starting points: • counting aloud forward or backward and • finding missing numbers on a number line.	3	Count aloud, forward or backward, in consecutive order (0 through 999).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	3	Identify 100 more/100 less than a given number up to 900.*		
	4	Compare two whole numbers and order three or more whole numbers through 1,000 by applying the concept of place value using symbols (<, >, =, ≠).	11	Compare two whole numbers through 999.
			13	Order three or more whole numbers through 999 (least to greatest or greatest to least).
	5	Identify the place value and actual value of digits for whole numbers up to four digits (to 1,000).	7	State verbally whole numbers, through 999, using correct place value (e.g., A student will read 528 as five hundreds, two tens, and eight ones.).
	6	Explain why a whole number through 1,000 is odd or even.	10	Identify odd and even (including 0) whole numbers through 999.
	7	Count money to $1.00: • find the value of a collection of coins and • use multiple ways to represent a given amount.	16	Count money through $5.00 using manipulatives and pictures of bills and coins.
			17	Identify the value of a collection of money using the symbols ¢ and $ through $5.00.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	8	Identify and represent common fractions (halves, thirds, fourths) as: • fair sharing parts of wholes, • parts of a set, and • locations on a number line.*	14	Make models that represent given fractions (halves and fourths).
			15	Identify in symbols and words a model that is divided into equal fractional parts (halves and fourths).
	M02-S3C3-01	**Moved to Strand 3 Concept 3**	6	State equivalent forms of whole numbers using multiples of 10 through 1,000 (430 + 200 = 600 + 30).
		REMOVED	12	Use ordinal numbers.
	M02-S1C2-01	**Moved to Strand 1 Concept 2**	18	Use decimals through hundredths in contextual situations with money.
		REMOVED	19	Compare two decimals using money, through hundredths, using models, illustrations, or symbols.
		REMOVED	20	Distinguish the equivalency among decimals, fractions and percents (e.g., half-dollar = 50¢ = 50%).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	1	Solve contextual problems using multiple representations involving: • addition and subtraction up to two-digit numbers; • multiplication for 1s, 2s, 5s, and 10s; and • adding and subtracting money up to $1.00.	S1C2-01	Use decimals through hundredths in contextual situations with money.
			7	Select the grade-level appropriate operation to solve word problems.
			8	Solve word problems using addition and subtraction of two 2-digit numbers, with regrouping AND two 3-digit numbers without regrouping.
			17	Add and subtract money without regrouping using manipulatives and paper and pencil, through $5.00.
	2	Demonstrate the ability to add and subtract whole numbers (up to at least two digits) and decimals (in the context of money) flexibly, accurately, and efficiently: • with models and manipulatives, • with up to three addends, and • up to $1.00.	1	Demonstrate the process of addition through two three-digit whole numbers, using manipulatives.
			2	Demonstrate the process of subtraction using manipulatives with two-digit whole numbers.
			4	Add one- and two-digit whole numbers with regrouping.
			5	Subtract one- and two-digit whole numbers with regrouping.
			6	Add 3 one- or two-digit addends.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	3	Solve problems by recalling and using addition and subtraction facts.	3	State addition and subtraction facts.
			7	Select the grade-level appropriate operation to solve word problems.
	4	Demonstrate the concept of multiplication for 1s, 2s, 5s, and 10s: • using skip counting, • combining equal sets, • making arrays, and • using repeated addition.	10	State multiplication facts: 2s, 5s and 10s.
	5	Apply properties to solve addition/subtraction problems: • identity property of addition/subtraction, • commutative property of addition, and • associative property of addition.	11	Demonstrate the associative property of addition [e.g., (3 + 5) + 4 = 3 + (5 + 4)].
			12	Apply grade-level appropriate properties to assist in computation.
	6	Apply the concept of addition and subtraction as inverse operations to solve problems (fact families).	3	State addition and subtraction facts.
			7	Select the grade-level appropriate operation to solve word problems.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations		**REMOVED**	9	Count by multiples of three.
		REMOVED	13	Apply the symbols: +, -, x, ÷, =, ≠, <, >, %.
		REMOVED	14	Use grade-level appropriate mathematical terminology.
	M04-S1C2-01	**Moved to Grade 4**	15	Demonstrate addition of fractions with like denominators (halves and fourths) using models.
	M04-S1C2-01	**Moved to Grade 4**	16	Demonstrate subtraction of fractions with like denominators (halves and fourths) using models.
3. Estimation	1	Use benchmark numbers and/or number lines to estimate, calculate, and solve problems involving addition and subtraction of numbers up to two digits.*	1	Solve problems using a variety of mental computations and reasonable estimation.
			2	Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.
	2	Describe differences between estimates and actual calculations.	3	Compare an estimate to the actual measure.
			4	Evaluate the reasonableness of an estimate.

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Data Analysis (Statistics)	1	Collect, record, organize, and display data using pictographs with symbols that represent multiple units, frequency tables, and single bar graphs	2	Make a simple pictograph or tally chart with appropriate labels from organized data.
	2	Interpret displays of data; formulate questions based on displays of data.	3	Interpret pictographs using terms such as most, least, equal, more than, less than, and greatest.
			4	Answer questions about a pictograph using terms such as most, least, equal, more than, less than, and greatest.
			5	Formulate questions based on graphs, charts, and tables.
			6	Solve problems using graphs, charts, and tables
		REMOVED	1	Formulate questions to collect data in contextual situations.
2. Probability		**REMOVED**	1	Name the possible outcomes for a probability experiment.
		REMOVED	2	Predict the most likely or least likely outcome in probability experiments (e.g., Predict the chance of spinning one of the 2 colors on a 2-colored spinner.).
		REMOVED	3	Predict the outcome of a grade-level appropriate probability experiment.

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GRADE 2

Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Probability		**REMOVED**	4	Record the data from performing a grade-level appropriate probability experiment.
		REMOVED	5	Compare the outcome of an experiment to predictions made prior to performing the experiment.
		REMOVED	6	Compare the results of two repetitions of the same grade-level appropriate probability experiment.
3. Discrete Mathematics – Systematic Listing and Counting	1	Solve a variety of problems based on the addition principle of counting.*		
	2	List all possibilities in simple counting situations in a systematic way using objects, pictures, and/or words.*		
		REMOVED	1	Make arrangements that represent the number of combinations that can be formed by pairing items taken from 2 sets, using manipulatives (e.g., How many types of sandwiches can one make with 3 different types of fillings and 2 types of bread if only one type of bread and 1 kind of filling is used for each sandwich?).

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Discrete Mathematics – Vertex-Edge Graphs	1	Construct simple vertex-edge graphs from simple pictures or maps.	1	Color pictures with the least number of colors so that no common edges share the same color (increased complexity throughout grade levels).
	2	Explore simple properties of vertex-edge graphs: • number of vertices and edges, • neighboring vertices, and • paths in a graph.*		

Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Patterns	1	Recognize, describe, extend, or find missing terms in a numerical or symbolic pattern.*	1	Communicate a grade-level appropriate pattern, using symbols or numbers (e.g., ∇, O, Δ, ∇, O, Δ, ∇, ___, ___, ___).
			2	Extend a grade-level appropriate repetitive pattern (e.g., 12, 22, 32, ___, ___, ___).

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Patterns	2	Create a different representation of a given numerical or symbolic pattern.	3	Create grade-level appropriate patterns.
	3	Explain the rule for a given numerical or symbolic pattern.	1	Communicate a grade-level appropriate pattern, using symbols or numbers (e.g., ∇, O, Δ, ∇, O, Δ, ∇, ___, ___, ___).
2. Functions and Relationships	1	Describe, extend, or find the missing term(s) in a given function or rule using addition or subtraction. (	1	Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).
3. Algebraic Representations	1	Record equivalent forms of whole numbers to at least 1,000 by constructing models and using numbers. *		
	2	Compare expressions by applying the symbols (<, >, =, ≠).*		
	3	Represent a word problem requiring addition or subtraction through 100 in an equation using the following forms: • a + b = □, • a + □ = c, • □ + b = c, • c – a = □, • c - □ = b, and • □ – a = b.*		

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Algebraic Representations	4	Identify the value of the variable in an equation involving an addition or subtraction fact.	1	Use variables in contextual situations.
			2	Find the missing element (addend, subtrahend, minuend, sum, and difference) in addition and subtraction number sentences for sums through 18 and minuends through 9 (e.g., 13 - _ = 8).
4. Analysis of Change		**REMOVED**	1	Identify the change in a variable over time (e.g., an object gets taller, colder, heavier).
		REMOVED	2	Make simple predictions based on a variable (e.g., a child's height from year to year).

Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties	1	Describe and compare the attributes of 2-dimensional shapes using the terms side, vertex, point, and length for polygons up to six sides including their relationship to real world objects.	1	Compare attributes of 2-dimensional shapes (square, rectangle, triangle, and circle).
	2	Predict and verify the results of composing and decomposing 2-dimensional shapes.*		

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties	3	Describe and compare properties of simple and compound figures composed of triangles, squares, and rectangles.*		
		REMOVED	2	Recognize congruent shapes.
	M02-S4C2-01	**Moved to Strand 4 Concept 2**	3	Recognize line(s) of symmetry for a 2-dimensional shape.
2. Transformation of Shapes	1	Justify whether or not a 2-dimensional shape has line symmetry.	S4C2-03	Recognize line(s) of symmetry for a 2-dimensional shape.
		REMOVED	1	Recognize same shape in different positions (flip/reflection).
3. Coordinate Geometry		**No performance objectives at this grade level.**		

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Measurement	1	Apply measurement skills to measure the attributes of an object (length, width, height, capacity, weight): • name measureable attributes of the object, • select an appropriate attribute to measure, • select an appropriate unit of measure (inch, foot, ounce, pound, cup, or quart), • select an appropriate tool, • estimate, • measure, and • compare estimate to actual measure.	1	Identify the type of measure (e.g., weight, height, and time) for each attribute of an object.
			2	Select the appropriate U.S. customary measure of accuracy: • length – inches, feet, yards, miles, • capacity/volume – pints, quarts, and • mass/weight – ounces.
			5	Select the appropriate tool to measure the given characteristic of an object.
			6	Measure a given object using the appropriate unit of measure: • length – inches, miles, • capacity/volume – pints, quarts, and • mass/weight – ounces.
			S1C3-02	Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.
			S1C3-03	Compare an estimate to the actual measure.

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Measurement	2	Tell time to the nearest minute using analog and digital clocks.	3	Tell time to the quarter hour using analog and digital clocks.
			M03-S4C4-02	Tell time with one-minute precision (analog).
	3	Demonstrate equivalent relationships using iterations: • 1 foot = 12 inches, • 1 quart = 4 cups, • 1 pound = 16 ounces, • 1 hour = 60 minutes, • 1 day = 24 hours, • 1 week = 7 days, and • 1 year = 12 months.	7	State equivalent relationships: • 12 inches = 1 foot, • 60 minutes = 1 hour, • 24 hours = 1 day, • 7 days = 1 week, • 12 months = 1 year, • 100 pennies = 1 dollar, • 10 dimes = 1 dollar, and • 4 quarters = 1 dollar.
	M03-S4C4-02	**Moved to Grade 3**	4	Determine the passage of time using units of days and weeks within a month using a calendar.

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Strand 5: Structure and Logic				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Algorithms and Algorithmic Thinking	M02-S5C2-03	**Moved to Strand 5 Concept 2**	1	Create contextual problems that require addition or subtraction with one- or two-digit numbers.
2. Logic, Reasoning, Arguments, and Mathematical Proof	1	Develop the problem-solving strategy of making an organized list.*		
	2	Solve a non-routine problem by selecting and using a strategy.*		
	3	Create written addition or subtraction word problems using one- or two-digit numbers.	S5C1-01	Create contextual problems that require addition or subtraction with one- or two-digit numbers.
		REMOVED	1	Identify the concepts *some, every*, and *many* within the context of logical reasoning.
		REMOVED	2	Identify the concepts *all* and *none* within the context of logical reasoning.

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